Understanding and Managing Your Allocations

As part of applying for a NAS account, you (or your principal investigator) requested an allocation for computing time on HECC systems. Allocations for NAS supercomputing resources are granted per project group ID (GID), and are specified in [standard billing units (SBUs)](#).

Usage Charge Methods

System usage is charged as follows:

- **Front-End Systems**: Usage is *not* charged on the Pleiades front-end systems (PFEs). However, remember that these front-end nodes are intended for editing and/or compiling and running short testing jobs—not for running production jobs. If you misuse these systems, your jobs will be terminated.
- **Lou Data Analysis Nodes**: Usage is *not* charged on the Lou data analysis nodes (LDANs), which provide dedicated PBS resources for pre- and post-processing tasks.
- **Compute Nodes**: Usage on the Pleiades, Aitken, Electra, and Endeavour compute nodes is charged. The number of SBUs charged to a job is calculated by multiplying the number of total wall-clock hours used by the minimum allocation units (MAUs)—the smallest unit of hardware resource that the Portable Batch System (PBS) will allocate to a job.

SBU rates vary by processor type and system. See [Job Accounting](#) for a full list.

To continue running jobs after your SBU allocation has been expended, you will need to request more hours. You can check your remaining SBU balance by running the acct_ytd command. See [Job Accounting Utilities](#) for more information.

TIP: You can easily keep track of allocation and usage for all of your GIDs (and monitor all of your PBS jobs) in one central location by logging into the [myNAS Portal](#).

Charging to a Non-Default GID

If you have access to more than one GID, only one of those GIDs is set as your default. The default GID is listed in the /etc/passwd file of each system you have access to. Your jobs will be charged to the default GID unless you specify a different one. If you want to charge your usage to a non-default GID (for example, s0901), add the GID to your PBS script. For example:

#PBS -W group_list=s0901

Understanding Queues

All HECC supercomputers use the Portable Batch System (PBS) to manage both interactive and batch jobs. Pleiades, Aitken, and Electra use the same PBS server and job submission queues. Endeavour has a separate PBS server and separate queues.

Although different queues are available on different systems, queues typically have constraints on maximum wall-clock time and/or the number of nodes allowed for a job. Some queues have other constraints or are restricted to serving certain users or GIDs. In addition, mission directorate limits are set on the number of cores available on Pleiades, Aitken, and Electra to ensure that each mission directorate can access a fair share of resources.

You can use the qstat command as follows to view various types of information:

qstat -Q
    Lists available queues and their constraints on a system.
qstat -Qf
    Lists available queues and their constraints on a system.
qstat -W shares=-
    Lists mission shares available for each mission.

For more information, see the following articles:

- [PBS Job Queue Structure](#)
- [Mission Shares Policy](#)

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